# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/903,937 | 07/12/2001 | Matthew Edward Aubertine | AUS920000329US1/1753P | 1980 |

| | | EXAMINER |
|---|---|---|
| 7590 | 10/05/2004 | FOWLKES, ANDRE R |

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| ART UNIT | PAPER NUMBER |
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| 2122 | |

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on <u>03 October 2001</u>.

2a)☐ This action is **FINAL.**      2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is

  closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) <u>1-18</u> is/are pending in the application.

  4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-18</u> is/are rejected.

7)☒ Claim(s) <u>10,12 and 15</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>03 October 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

  a)☐ All   b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage

      application from the International Bureau (PCT Rule 17.2(a)).

  * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

| | |
|---|---|
| 1) ☒ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413) |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) ☐ Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ . | 6) ☐ Other: _____ . |

## DETAILED ACTION

1.    Claims 1-18 are pending.

### *Claim Objections*

2.    Claims 10, 12 and 15 are objected to because of the following informalities:

- "The system of claim 10", should be –The system of claim 7– in claim 10, line 1.

-"The method of claim 5", should be –The system of claim 11– in claim 12, line 1.

- "The computer readable medium of claim 131", should be –The computer

readable medium of claim 13– in claim 15, line 1.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

3.    The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4.    Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Gross,

et al., (Gross), "Parallel Compilation for a Parallel Machine", ACM, 0-8791-306-X.

As per claim 1, Gross discloses a **method for optimizing the use of a plurality**

**of processors when compiling a program in a computer system,** (p. 91 col. R:10-

13, "Our need to speedup compilation ... (on) a parallel system, ... led us to investigate

parallel compilation"), **the method comprising the steps of:**

**(a) providing a list of directories and a list of processors** (p. 93 col. R:24-p.

94 col. L:13, "The number of processes on the function level, called *function masters* is

equal to the total number of functions in the program(i.e. directories containing parts of

the code to be compiled) ... The section masters attempt to distribute the function

masters to different workstations (i.e. processors, from a list of processors)"),

**(b) assigning a directory to a next available processor in an ordered**

**manner to allow the next available processor to compile at least one file within**

**the directory** (p. 94 col. L:56-58, "we adopt a simple first-come-first served strategy

that distributes the tasks over the available processors"),

**(c) repeating step (b) to ensure that the maximum number of directories**

**can be compiled** (p. 94 col. L:56-58, "we adopt a simple first-come-first served strategy

that distributes the tasks over the available processors", this step essentially performs

repeatedly, as processors finish their tasks and, again, become available).

As per claim 2, the rejection of claim 1 is incorporated and further, Gross

discloses that **the assigning step (b) further includes the step of (b1) obtaining a**

**directory in which all dependencies have been satisfied** (p. 94 col. R:34-36, "Each

(group of files, i.e. directory) ... can be compiled separately after the object files on the

dependency list have been generated (i.e. the system only works, as intended, if

processors are assigned directories of files to compile, in which all dependencies have

been satisfied").


As per claim 3, the rejection of claim 1 is incorporated and further, Gross

discloses that **the assigning step (b) further includes the step of (b1), updating the**

**list of processors and the list of directories based upon the assignment of the**

**directory** (p. 94 col. L:56-58, "we adopt a simple first-come-first served strategy that

distributes the tasks (i.e. code in directories, to be compiles) over the available

processors", and to implement this strategy, the system is aware of the current state of

the processors, the state of their current tasks as well as the tasks yet to be

accomplished).


As per claim 4, the rejection of claim 1 is incorporated and further, Gross

discloses that **the assigning step (b) further includes the step of (b1) providing a**

**directory update mechanism for assigning the directories in the ordered manner**

(p. 94 col. L:56-58, "we adopt a simple first-come-first served strategy that distributes

the tasks over the available processors").


As per claim 5, the rejection of claim 4 is incorporated and further, Gross

discloses that providing an update mechanism step (b1) further comprises the steps of:

**(b11) providing an array of dependency changes** (p. 94 col. R:32-34, "The

input to parallel make ... explicitly specifies dependencies (and dependency changes)

between modules"),

**(b12) merging the dependency changes array with a master array of**

**changes** (p. 94 col. R:32-34, "The input to parallel make ... explicitly specifies

dependencies (and dependency changes) between modules").

As per claim 6, the rejection of claim 5 is incorporated and further, Gross

discloses that the merging step (b12) comprises the steps of:

**(b121) obtaining a dependency change from the dependency changes array**

(p. 94 col. R:32-34, "The input to parallel make ... explicitly specifies dependencies (and

dependency changes) between modules"),

**(b122) determining whether the dependency change is in a directory in the**

**master array** (p. 94 col. R:32-34, "The input to parallel make (is a make file that)...

explicitly specifies dependencies (and dependency changes) between modules", and

the changed make file is be compared with the original make file),

**(b123) updating the directory in the master array of the dependency change**

**in a directory of the master array** (p. 94 col. R:32-34, "The input to parallel make (is a

make file that) ... explicitly specifies dependencies (and dependency changes) between

modules", and the master/original make file is updated),

**(b124) adding dependency change to the master array in a new directory if**

**the dependency change is not in a directory of the master array** (p. 94 col. R:32-34,

"The input to parallel make (is a make file that)... explicitly specifies dependencies (and dependency changes) between modules", and the updated make file is uses to specify updated dependencies),

**(b125) determining if there is another dependency change in the dependency changes array after either step (b123) or step (b124)** (p. 94 col. R:32-34, "The input to parallel make ... explicitly specifies dependencies (and dependency changes) between modules"),

**(b126) repeating steps (b121)-(b125) until all dependency changes have been obtained from the dependency change array** (p. 94 col. R:32-34, "The input to parallel make ... explicitly specifies dependencies (and dependency changes) between modules", the processes Is repeated in order to have all the dependencies specified).

As per claims 7-12, this is a system version of the claimed method discussed above, in claims 1-6, wherein all claimed limitations have also been addressed and/or cited as set forth above. For example, see Gross's new compiler (p. 91, col. L:3-8).

As per claims 13-18, this is a computer readable medium/product version of the claimed method discussed above, in claims 1-6, wherein all claimed limitations have also been addressed and/or cited as set forth above. Additionally, such a product is deemed to be inherent in the Gross system, otherwise, it would be inoperative.

### *Conclusion*

4.      After October 25, 2004, the examiner can be reached at new telephone number

(571) 272-3697, and the examiner's supervisor, Tuan Q. Dam can be reached on (571)

272-3695.

5.      Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Andre R. Fowlkes whose telephone number is (703)305-

8889.  The examiner can normally be reached on Monday - Friday, 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Tuan Q. Dam can be reached on (703)305-4552.  The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system.  Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

ARF

TUAN DAM
SUPERVISORY PATENT EXAMINER